METHOD AND APPARATUS FOR STORING ELECTRIC ENERGY

Abstract: A method and apparatus for storing large quantities of electric energy in a small mass and volume at a high dc electric potential. Dispersed conductive particles **16** in a dispersing medium **15** contained in an insulator casing **21** between an insulating divider **11** and either a positive conductive plate **12** or a negative conductive plate**13** accumulate and store electric charges. A procedure of particle-to-particle charge pumping is employed to convey electric charges to and from the positive conductive plate **12** and the negative conductive plate **13** to the surfaces of each of a great multitude of dispersed conductive particles **16**. Energizing results in oppositely charged dispersed conductive particles **16** becoming electrically bound to the surfaces of the insulating divider **11** with a large quantity of electric charges also residing on the outside surfaces of the repelling dispersed conductive particles **16**, whereby the total effective capacitor plate surface area is greatly increased. A large effective plate surface area combined with a high working dc voltage allows a large quantity of electric energy to be stored in a small mass and volume that can also be retrieved very rapidly for doing useful work.